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Prospects for Agricultural Recovery

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SUMMARY

This bulletin explains the method of farm budgeting or planning which has been in use in farm management work for several years. This method is of particular interest at present because it enables a farmer to estimate how adoption of the corn-hog plan would probably affect his net farm income.

In essence this method consists of drawing up an outline of the organization and returns from his farm as now operated. Next a similar plan is drawn up as it would be modified by adoption, for instance, of the corn-hog plan. There are four main steps in drawing up each budget:

1. *Outline of the Cropping System.* This includes a list of acreages of all crops raised, together with the total production in each case. Direct cash expenses are entered on the one side and disposition of crops, including sales, on the other.

2. *Livestock Requirements.* A list is drawn up showing the numbers of each type of livestock and the estimated or recorded consumption of each feed. Direct cash expenses should also be listed here.

3. *Livestock Production.* A summary is made of the amount of each livestock product. This indicates the amount that was sold and receipts from sales and also the portion that was consumed in the household.

4. *Summary for the Farm.* Cash receipts and expenses for the whole farm are brought together. Most of these figures may be obtained from the three tables just described. There will also be some additional items of a general or overhead type such as wages of labor hired, taxes, etc. The difference between gross income and total expenditures constitutes net income which serves as a measure of successfulness of the business.

In this bulletin the budgeting or planning method has been applied to four individual farms of important Iowa types; a hog farm, a crop farm, a cattle raising farm and a dairy farm.

It is found that of these four types, the hog farm gains most in increased net income from the corn-hog plan. The cattle raising farm and the dairy farm gain somewhat less. The crop farm gains particularly if it is able to take advantage of the 45-cent corn loan. With prices at late 1933 levels, all these particular farms would find their net incomes increased by the corn-hog plan.

Net benefits in income from the corn-hog plan would increase with each decline in the open market price of corn or hogs and would decrease with rises in market prices.

It should be recognized that there are many other considerations for the farmer besides direct financial gains from the corn-hog plan.

Prospects for Agricultural Recovery

III. Estimating Advantages of the Corn-Hog Plan to the Individual Farm*

By John A. Hopkins, Jr.

This is one of a series of bulletins dealing with agricultural recovery and considers specifically the corn-hog plan of the Agricultural Adjustment Administration. The need for such a plan was discussed in Circular 148 of the Iowa Agricultural Experiment Station, in which it was said that, "Until our foreign trade is reëstablished, that is, until imports are increased. exports must be reduced. Therefore, temporarily at least, some plan to facilitate the orderly retreat of our cotton, wheat, hog and tobacco producers is not only desirable but in all probability essential."

The present plan and its advantages are being discussed currently by the Extension Service and in literature distributed by the Agricultural Adjustment Administration. It is believed that the present plan is the most practical one yet devised for handling the emergency aspects of the corn-hog production problem.

It is recognized that more permanent plans for the control of agricultural production are under discussion. Some of the considerations underlying such a permanent plan will be discussed in a later bulletin in this series. When such permanent plans are ready for presentation it may be necessary to revise to a greater or lesser extent the present method of controlling corn and hog production.

The plight of a large number of Iowa farmers during the past 3 or 4 years has been a desperate one. The index of Iowa farm prices declined from 147 percent of the pre-war average in 1929 to 127 in 1930, 86 in 1931 and 56 in 1932. Meantime the buying power of consumers was undergoing a somewhat similar reduction as is indicated by the index of payrolls in the United States which fell from over 100 percent of the 1923-25 average in 1929 to around 40 percent in the latter half of 1932. At the same time other countries were having similar difficulties, and in their efforts to protect their own agriculture they were adopting virtually prohibitive tariffs and quotas, thereby

* Acknowledgement is made of the assistance of other members of the Agricultural Economics Section in preparing this bulletin. The author wishes particularly to express his appreciation of Prof. L. G. Allbaugh's helpful criticism of the manuscript and his assistance in preparing and checking the tabular material.

permitting smaller imports of American and other raw materials. These foreign restrictions have weakened still further the prices of such products as hogs, wheat and cotton.

Under this condition of falling prices the tendency has been for the individual farmer to continue to produce as heavily as he was able. The result was further depression of prices and the piling up of burdensome stocks of raw materials. Thus cold storage reports for November, 1933, showed 493 million pounds of pork in storage in the United States as compared with a 5-year average of 419 million pounds, and 134 million pounds of lard as compared with a 5-year average of 59 million pounds. This was true of many products other than pork and lard, and consequently, the crises should be recognized as affecting agriculture as a whole. The same condition prevailed in countries other than the United States, and thus the problem should be considered as world wide and not as affecting merely the Corn Belt.

Because of this serious situation it was necessary that some plan be devised which would remove the individual's incentive to heavy production. The present corn-hog plan is the result insofar as it applies particularly to the Corn Belt. By a system of benefit payments for smaller production this plan seeks to reconcile the individual's interest with that of the group. It is hoped and believed that this plan will speed the restoration of a healthful agriculture.

The problem of agricultural adjustment affects all farmers, and the present plan cannot be successful unless it is adopted by a large proportion of the corn and hog producers. Its sponsors clearly depend on obtaining most of the needed support from a clear understanding of the benefits to the individual. In a practical way, this is probably its strongest appeal. It is believed that the greatest support can be obtained if farmers understand the plan fully, including both its advantages and its disadvantages. It is presumed that it will be discussed fully and frankly, with no reservations of pertinent facts.

Since the corn-hog plan holds out direct benefits to the individual, it is important that the farmer have available a method whereby he can estimate correctly the net effect of this plan on his farm income. This is the primary purpose of this bulletin. It does not conflict with the need for farmers to realize implications of the plan to the group as well as to the individual. They must look farther ahead than the immediate monetary gain if the present plan is to be administered effectively and if it is to be modified into a more permanent program. In addition to direct monetary benefits to the individual, benefits from the wide training in coöperation which will occur under the plan will also be of great importance.

This bulletin should not be misinterpreted as advising farmers to stay out of the plan in cases where it does not promise to be to their direct profit. The group is entitled to a certain amount of self-sacrifice on the part of the individual. But it is believed that if the financial aspects of the plan are clearly understood only a small percentage of Iowa farmers will find that they can afford to stay out.

A second purpose is to show how it is possible to figure out adjustments in the organization of the farm to conform most advantageously to the corn-hog plan. This is particularly important in adjusting livestock enterprises to the reduced supply of feed crops which will be available on farms adopting the plan.

A third and subordinate purpose is to point out some of the principal questions, such as the future value of soil improvement under the plan, which cannot be dealt with in exact terms. Another question of this type has to do with the value which farmers will attach to the income-insurance feature of the plan. The benefit payments will provide an element of certainty in the farm income and will not be subject to fluctuations from crop failures nor from changes in price levels.

The net benefit from the corn-hog plan will differ widely among different types of farms and even among different farms of the same type. Consequently, this bulletin takes up its adoption by one farm of each of four important Iowa types, including a hog farm, a crop farm, a cattle raising farm and a dairy farm. The difference in organization of these farms will be indicated in the tables.

SOURCE OF DATA

The basic data used in these examples come from actual Iowa farms and do not represent averages of groups of farms. Crop yields and quantities of products bought and sold, as well as amounts of each crop fed, are shown as they actually were on the farms.[1]

In order that farm income and expense figures might all be on a comparable basis, all sales and purchases were recomputed

[1] There is one exception. This is with regard to inventories and sales of crops. In most cases there is some change in the amount of feed on hand from the beginning to the end of a year. This may come from feeding up more of the crops before Jan. 1, in some years than in others or from selling a crop before Jan. 1 in one year and after this date in the next year. Where this is done it is necessary to adjust farm receipts for changes in inventories. These adjustments are likely to prove confusing and add nothing to the discussion in such comparisons as are being made in this bulletin. Therefore, purchases and sales were adjusted in such a way that each farm would have the same amount of feed on hand at the end of the year as at the beginning. This does not affect the net income because an increase of sales would be offset by a reduction in value of inventories.

in terms of Iowa farm prices prevailing in October and November, 1933. For each product the same price is used throughout the entire bulletin.[2] Also, in computing for each farm what the returns would probably be with the plan the same prices are used as when the returns are figured without the plan. It is assumed that if any one individual farmer should decide to stay out of the plan his decision would not appreciably change the prices he would receive.

Again it should be emphasized that the purpose is not to give a specific answer to the question whether a farmer of a given type should join the corn-hog plan, but simply to explain a method of computation that may be used by any farmer and, incidentally, to point out some outstanding problems which farmers of given types will need to bear in mind in adopting this plan.

The inferences and conclusions reached in this bulletin with regard to a given farm are not intended to be applied to all others of that type. Each farm has problems of its own and, although the decisions on one hog farm, for instance, are likely to be similar to those on another hog farm, satisfactory adjustments will depend on treating each individual farm as a separate problem.

METHOD OF PROCEDURE

The general method used in this bulletin in comparing farm returns is known as the farm budgeting or farm planning method. It is the simplest and most straight-forward means of comparing probable returns under two different systems of organization. It is the method which thinking farmers use, consciously or unconsciously, in planning ahead. It enables the farm operator to draw up, in black and white, clear-cut comparisons of the effects of alternative plans, and has the added advantage of considering the farm as a whole rather than in isolated sections.

Under this method we first draw up a summary of the organization and the returns from a farm as it is actually being operated. Next, using the same rates of crop yields and livestock production and with the same prices for things bought and sold; we draw up a parallel plan which involves the changes necessary if the corn-hog contract were adopted.

THE CROPPING SYSTEM

In drawing up each of the parallel plans for a farm there are four essential steps. The first is to outline the cropping sys-

[2] The prices used are: Hogs $4.00 per cwt.; cattle $5.50 per cwt.; corn 30 cents per bu.; oats 18 cents per bu.; butterfat 22 cents per lb.; eggs 18 cents per doz.; and poultry 10 cents per lb.

tem. This includes a brief table showing the acreages in each crop. It also shows the production expressed in bushels or tons. Average yields that have actually been obtained on the particular farm are used. At this point it is convenient to list and direct outlays incurred in raising crops such as for purchases of seed, twine and threshing bills. Then, after the feeding requirements are computed, the disposition should be shown for each crop, including total amounts to be fed, used for seed, or sold, and also receipts from sales.

It should be noted that all value figures refer to actual sales or purchases or consumption by the household and do not include values of products both raised and consumed in the farm business. We are interested here in returns to the whole farm and not in profits or losses on separate enterprises. These would greatly complicate the budget and are not necessary for our present purpose.

LIVESTOCK REQUIREMENTS

The second step is to draw up a plan for the livestock system similar to that for crops. This involves listing the number of head of livestock in each enterprise. We need to know how much of each feed crop was consumed by each enterprise. The total, for instance, of corn fed plus that sold should check with the total produced or purchased. Wherever commercial feeds are to be bought for a livestock enterprise, both the amounts and the values should be entered. It is also convenient to enter opposite the names of enterprises amounts of any direct expenditures as for veterinary bills, vaccinating hogs, etc.

LIVESTOCK PRODUCTION

The third step is to list the production of each livestock enterprise and the receipts from sales. Both quantities and values should be used here. Livestock products used in the household should be listed separately from those sold. Farm produce used by the family is a genuine element of income (since family living is not properly a part of the farm business), but it is an income in kind and not in cash.

FARM SUMMARY

The fourth step is to bring the various expenses and receipts together in a summary for the whole farm. Most of the necessary figures are available in the first three tables. Thus the total direct crop expense can be obtained at the bottom of the crop summary and the total receipts from sale of livestock can be found at the bottom of the table on livestock production

which was discussed in the last paragraph. But there are some items of a general or overhead nature which have not yet been entered. Expenses for labor hired, upkeep of equipment, taxes paid, and any other items which apply to the farm as a whole should be entered in the summary.

Now we are able to add up all items of income to obtain a figure showing gross income. On the other side we can add up all the expense figures and find total expenditures for the farm business. Next we subtract total expenditures from total receipts and ascertain the net income which indicates the success of the farm operation and shows how much the farmer has earned from the use of his labor, his land and his capital.

When it is desired to compare probable returns from the farm as it has been organized with probable returns from a somewhat different organization, all that is necessary is to draw up a similar plan or budget for the new system and compare it with the budget for the old system. With the adoption of the corn-hog plan it is not necessary to draw up a completely new budget. Many parts of the farm would not be changed at all. For these parts of the budget the same figures would be used as in the old plan. This is what is done in the budgets which follow. Figures which are unchanged are indicated by an asterisk.

APPLICATION OF THE PLAN TO A HOG FARM

A hog farm stands in a position to obtain the greatest benefit from adoption of the corn-hog plan.[3] The type referred to here is the farm which neither buys nor sells corn and which feeds to hogs a large proportion of that raised. The amounts of crops and livestock bought and sold were taken directly from the records of a hog farm. Prices, however, have been adjusted to levels prevailing in late 1933, as is the case throughout the entire bulletin. Let us see how the adoption of the corn-hog plan would affect the income and farming operations.

THE CROPPING SYSTEM

The first step is to draw up a statement of the crop plan of this farm as it is actually being operated. Next we will enter in the same statement, in bold faced type, any figures which would be changed by the adoption of the corn-hog plan. For convenience we shall call the present organization of the farm the "old plan" while the organization which would result from signing the corn-hog contract will be called the "new plan."

[3] The principal provisions of the corn-hog contract will be found in the appendix.

TABLE I. HOG FARM. THE CROP PLAN.

Crops	Acres	Expense		Yield		Disposition		
		Kind	Amt.	Per acre	Total	Feed and seed	Sales	
							Bu.	Value
Corn: Old plan	57.7	———	—	53.3 bu.	3,076 bu.	3,076 bu.	—	—
New plan	**46.2**	———	—	**53.3 bu.**	**2,462 bu.**	**2,462 bu.**	—	—
Oats: Old plan	44.4	Thresh and twine	$ 54	52.2 bu.	2,320 bu.	1,283 bu.	1,037	$186
New plan	**44.4**		**54**	**52.2 bu.**	**2,320 bu.**	**1,240 bu.**	**1,080**	**194**
Barley*	4.6	Sweet clover seed	32	20.0 bu.	92 bu.	92 bu.	—	—
Alfalfa Hay*	7.5	Seed	26	3.1 tons	23½ tons	23½ tons	—	—
Alfalfa Pasture*	3.2	———	—	———	———	———	—	—
Bluegrass Pasture*	26.5	———	—	———	———	———	—	—
Corn land out of use, new plan	**11.5**	**Sweet clover seed**	**11**	———	———	———	—	—
Farmstead, Etc.*	8.6	———	—	———	———	———	—	—
Totals: Old plan	152.5	———	$112	———	———	———	—	$186
New plan	**152.5**	———	**123**	———	———	———	—	**194**

*Unchanged

Under the old plan 57.7 acres were in corn, 44.4 in oats, about 15 acres in other crops and 26.5 acres in bluegrass pasture. The soil is highly productive, and the corn yielded 53.3 bushels per acre, or a total of 3,076 bushels. If the corn-hog plan is to be adopted it would be necessary to cut the acreage of corn by 20 percent. This would result in 46.2 acres of corn, which at the same rate per acre would yield 2,462 bushels. This reduces the corn available for feeding by 614 bushels.[4]

There is a possibility that the yield may be somewhat greater than 53.3 bushels under the new plan. This man will have available the same number of horses and the same amount of labor, but will be raising a smaller acreage of corn. Therefore it will be possible for him to spend more time in preparing the seedbed and in cultivating the corn. It is not possible to tell in advance just what effect this additional work will have on the yield, but it would seem reasonable to expect an increase if the added labor is used wisely. This increase, however, is not counted on in the tables. The effort is made to be conservative in estimating the benefits of the plan and to err, if at all, on the safe side. The farmer, however, should keep this probable added benefit in mind.

[4] Under the contract it would be possible to retire up to 30 percent of the corn land. For the sake of simplicity, the minimum figure of 20 percent is used throughout these examples. Also the land rented to the government might be either poorer or better than the average for the farm with corresponding changes in benefit payments. But again, for simplicity, it is assumed in these examples that the rented acreages will be of productivity equal to the average of the farm.

Under the new plan the farmer would have a problem of what to do with the acreage rented by the AAA and retired from corn production. At the time this is written final regulations on the use of this land are not available. It could be used, however, to grow a legume crop for soil improvement. It is assumed that this would be done in the present case, and a small expense is indicated for seed.[5]

LIVESTOCK REQUIREMENTS

The next question has to do with the disposition of the crops. With corn production reduced by approximately one-fifth it will be necessary to modify the feeding plans. Of course the greater part of this adjustment will be made in the hog enterprise, but other livestock enterprises and the sales of crops will be affected also. Under the corn-hog contract the corn production must be reduced, but, presumably, the production of other feed grains and of forage crops will remain about as they were. The shortage of corn cannot be balanced completely against smaller hog production. Therefore, it will be necessary to economize on the use of corn by other enterprises and to substitute oats or other feeds for it wherever possible.

[5] See, in Appendix, contract provisions regarding the use of rented land.

TABLE II. HOG FARM. LIVESTOCK EXPENSES.

Kind of stock	No. head	Home-grown feeds		Commercial feeds			Other expenses
		Kind	Amount**	Kind	Amount	Value	
CATTLE*							
Cows	8	Corn	542 bu.	——	——	—	$19
Other	6	Oats	351 bu.	——	——	—	—
		Hay	16½ tons	——	——	—	—
		Fodder	9 tons	——	——	—	—
HOGS: Old plan		Corn	2,252 bu.	Tankage	100 lbs	$2	$60
New plan			**1,700 bu.**		**100 lbs**	**2**	**45**
SOWS: Old plan	13	Oats	618 bu.	Mineral	600 lbs	23	—
New plan	**9**		**475 bu.**		**450 lbs**	**16**	—
Old plan		——		Pig meal	11,000 lbs	220	—
New plan					**8,250 lbs**	**165**	—
POULTRY*	232	Corn	145 bu.	——	——	—	$23
		Oats	25 bu.	Misc. comm'l feeds	——	$180	—
		Barley	78 bu.	——	——	—	—
HORSES: Old plan	5	Corn	137 bu.	——	——	—	2
New plan			**75 bu.**	——	——	—	—
Old plan		Oats	147 bu.	——	——	—	—
New plan			**247 bu.**	——	——	—	—
		Hay*	7 tons	——	——	—	—
TOTALS: Old plan	—	——	——	——	——	$425	$104
New plan	—	——	——	——	——	**363**	**89**

*Unchanged

**Small grain seeds used on the farm are in addition to the figures in this column. This should be kept in mind in checking up between totals of this column and "Feed and Seed" column in table I.

There are several alternative methods of making the adjustments in feed consumption. One would be to reduce other livestock enterprises as well as hogs. This would generally lead to some surplus of oats and of roughage. Another way would be to raise somewhat more barley and less oats, since in fattening stock it is easier to substitute barley than oats for corn. In the four examples given in this bulletin these changes in acreages of other crops than corn have not been suggested specifically, but they are worth considering. The advice of the county agent and of the Farm Crops and Soils Section at Iowa State College should be sought on this subject.

In table II an effort is made to work out a satisfactory redistribution of the available feeds. The greatest change, of course, will be in the requirements of the hogs. Table III shows that the weight of hogs sold was 28,635 pounds in addition to 985 pounds which were butchered and used on the farm. Under the corn-hog contract the farmer will be allowed to butcher as much as before for home use but may not sell over 75 percent as many pigs. At the same weight per pig this would be 21,486 pounds. This makes the production limit under the new plan a total of 22,470 pounds which is approximately 76 percent of the old production. If the same method and the same rations are used this should require 76 percent of the amounts of feed fed to the hogs under the old plan. Carrying out these computations we find that the hogs would require about 1,700 bushels of corn and 475 bushels of oats. This reduces the corn feeding requirement for hogs by 552 bushels, but the production has been reduced by 614 bushels, leaving a shortage of 62 bushels of corn.

This discrepancy of 62 bushels of corn is relatively small in comparison with the 614-bushel reduction in size of crop. It suggests that the problem of adjusting livestock enterprises to the reduced feed supply will be no more difficult than the adjustments which the farmer makes each year because of variations in crop yields. This adjustment, however, differs from variations in yields in that the farmer knows in advance that it will be necessary and that it can be counted on with something approaching certainty.

The farmer must count on the usual variation from seasonal influences. In addition to this he will need to keep in mind the adjustment in feeding made necessary by the corn-hog plan. There is a possibility that a large yield on an individual farm in 1934 may make it unnecessary to adjust rations of corn at all. There is also an equal possibility that, because of short yields, the problem of adjustment might be seriously increased. It should be remembered that the 1934 spring pig crop will be fed on 1933 corn until September, at least. The full adjust-

ment in corn rations will not, therefore, be made until the 1934-35 feeding season.

It should be remembered that the crop production figures discussed here refer to the crop year 1934 while the estimates of feed consumption by hogs and other livestock refer to the feeding year which begins in the fall of 1934. Feed consumption prior to September, 1934, will also be affected by adoption of the corn-hog plan. There should be a saving of corn to sows, and a smaller consumption of 1933 corn by the spring pigs of 1934 if the plan is adopted. On farms where the 1933 corn yield was normal this will result in a somewhat larger carryover of corn into the 1934-35 feeding season. In those parts of the state where the 1933 crop was short it will help in making the corn supply reach farther but will not, in many cases, bring the carryover up to normal.

The saving of corn to sows will not amount to a very great fraction of the corn crop. The breeding sows have already been consuming corn at the normal rate for part of the breeding year. Also there may be a tendency on the part of some farmers to reduce the spring pig crop by less than a quarter to be sure of having a sufficient number of spring pigs. The effect of this saving will be greatest on specialized hog farms such as the one now under discussion.

These small discrepancies between feed supplies and demands for feeds may also have an important market influence. For the country as a whole the farmers who will have a little less corn to sell because of the corn-hog plan will be numbered by the hundreds of thousands, and the livestock producers who will need to buy just a little more corn will also run into large numbers.

In this particular case it is not so hard to find a place to save these 62 bushels of corn. Last year the horses were fed 137 bushels of corn and 147 bushels of oats. Let us suppose that we reduce the corn fed to horses by 62 bushels and increase the oats to horses by 100 bushels to make it up. The adjustment might be made by a smaller reduction in corn fed to horses and by some reduction in that fed to cattle, but the changes would be relatively small. The need for adjustments by other livestock enterprises might be eliminated by selling the hogs at lighter weights. Incidentally this would reduce the proportionate yield of lard. The advisability of selling the hogs at lighter weights would be determined by relative prices of different weights of hogs and of other livestock products as the hogs approach marketable weights.

Sales of oats will also be affected. The amount of oats required by hogs is reduced by 143 bushels, but 100 bushels more are to be fed to horses. This leaves 43 bushels more oats to sell

TABLE III. HOG FARM. LIVESTOCK PRODUCTION.

Kind of stock	Production		Used on farm		Sales		
	Kind	Amount	Amount	Value	No.	Amount	Value
CATTLE*	Cattle	3,860 lbs.	——	——	6	3,860 lbs.	$212
	Butterfat	1,964 lbs.	498 lbs.	$110	—	1,466 lbs.	323
HOGS: Old plan	Hogs	29,620 lbs.	985 lbs.	$ 39	118	28,635 lbs.	$1,145
New plan	**Hogs**	**22,470 lbs.**	**985 lbs.**	**39**	**89**	**21,486 lbs.**	**860**
POULTRY*	Poultry	1,726 lbs.	138 lbs.	$14	396	1,588 lbs.	$159
	Eggs	1,303 doz.	256 doz.	46	—	1,047 doz.	188
TOTALS: Old plan	——	——	——	$209	—	——	$2,027
New plan	——	——	——	**209**	—	——	**1,742**

*Unchanged

than in the previous year. So the oats sales, as shown on table I, will be 1,080 bushels instead of 1,037 and the income, at 18 cents per bushel, will be $194 instead of $186.

Another change in the feed requirements will be a reduced amount of minerals and pig meal bought for the hogs. This will save an expense of $62. Also the expense in vaccinating hogs, and other minor outlays on them will be reduced by about $15. These changes in the various sales and expenditures will show up in the summary in table IV.

LIVESTOCK PRODUCTION

Next we must consider the question; what will be the reduction in receipts from sales of hogs if this farmer subscribes to the corn-hog plan? Under the old plan sales of hogs brought in $1,145. With a reduction of one-fourth, the receipts from hogs will be only $860, a reduction of $285. Sales of other livestock and livestock products on this farm should not be changed greatly. But there is a chance that, with fewer hogs to look after, it may be possible to take better care of the other livestock and so get better returns from them. By more careful feeding it is also possible to produce somewhat more pounds of pork from the same feed to hogs.[6]

Table IV shows the figures on net income, in which the farmer will be most deeply interested. Under the old plan the sale of livestock and their products amounted to $2,027. Under the

[6] If the farmer should decide to sell his hogs at lighter weights than previously the figures in tables II, III and IV should be modified accordingly. In such a case he should use these new weights in table III. The change in weights would also modify the feed requirements in table II and the receipts from sale of hogs in tables III and IV. The net income under the old and new plans, as shown in tables IV and V, would change correspondingly. The budgeting or planning method can be used to work out the relative advantages of whatever methods or conditions the farmer assumes at the beginning of the process. But he should realize that the answers obtained in a specific case depend on these assumptions.

new plan, with reduced sale of hogs, livestock sales are $1,742. Crop sales will be increased slightly by the sale of more oats. Miscellaneous receipts and the value of farm products used by the household are counted the same in each case, though here, too, there is an opportunity for somewhat more of the family living to be produced at home.

FARM SUMMARY

Under the old plan the total receipts amounted to $2,674. Under the new plan there are the benefit payments to be added to the other receipts. The benefit on corn is computed on the basis of 30 cents per bushel on the corn taken out of production. On 11.5 acres, yielding 53.3 bushels per acre this amounts to $184. On hogs the benefits are at the rate of $5 per pig on 75 percent of the number of pigs previously sold (in the base period). The average number sold was 118. Seventy-five percent of this number is 89, which results in a benefit payment on hogs of $445. When these benefits are added to the other receipts, under the new plan, the total income amounts to $3,026, which is $352 more than the gross income under the old plan. The cost of administering the corn-hog plan must be deducted from these benefits. The administration expense will vary from county to county. Since it is not possible to make any very accurate estimate of the amount, it is omitted from these computations.

TABLE IV. HOG FARM.

SUMMARY OF RECEIPTS AND EXPENSES.

Receipts:		Expenses:	
Hogs: Old plan	$1,145	Livestock expense: Old plan	$104
New plan	**860**	**New Plan**	**89**
Other livestock income*	882	Crop expense: Old plan	112
		New plan	**123**
Total livestock sales: Old plan	2,027		
New plan	**1,742**	Other operating expense*	315
Total crop sales: Old plan	186	Total oper. expense: Old plan	531
New plan	194	**New plan**	**527**
Misc. receipts:*	252	Com'l. feeds bought: Old plan	425
		New plan	**363**
Farm products to household*	209		
		Total fixed expense*	639
Benefits (New plan)**			
Corn, 11.5 A, 53.3 bu. @ 30c	**184**	Total expenditures: Old plan	$1,595
		New plan	**1,529**
Hogs, 89 @ $5	**445**		
Total income: Old plan	$2,674	Net income: Old plan	$1,079
New plan	**3,026**	**New plan**	**1,497**

Net benefit of new plan $418**

*Unchanged
**Expenses of administration are to be deducted from these figures.

The shift to the new plan will also result in some changes in expenses. These must be taken into account before we know the net gain from signing the corn-hog contract. No large changes are expected on this farm in upkeep of equipment or expenses on auto. There should be a saving in fuel and oil on farms using tractors. If a large amount of labor were hired, or if there were a great amount of equipment, there might be some changes here. On this quarter section farm these savings will be very small.

There will be a reduction in the livestock expense such as for vaccination of pigs, etc. On the other hand, there will be an increase of about $11 in the crop expense for purchase of legume seed to sow on the land taken out of corn production. Also there will be a reduction of $62 in the purchases of feeds for hogs, which reduces total feed purchases from $425 to $363.

The fixed expenses for taxes, interest on indebtedness, insurance, and the upkeep of improvements will remain the same. When these are added up, we find that under the old plan total expenses were $1,595 and under the new plan they amount to $1,529. When expenses are deducted from total receipts we find that net income under the old plan was $1,079, while if the corn-hog plan were accepted it would be $1,497. This represents a net increase of $418 plus whatever may be received in the way of increased production from other enterprises and increased production of vegetables, etc., to be consumed on the farm. It should be noted, however, that the net increase in income of $418 is only about two-thirds of the $629 total benefits received.

NET BENEFITS CHANGE WITH THE PRICE OF HOGS

Whether an individual farmer finds it advisable to subscribe to the corn-hog plan will depend to a considerable degree on his judgment as to what the price of hogs is likely to be during the coming year. His judgment on probable price will depend on the extent to which he expects the plan to be adopted by farmers in general. This will be particularly true beginning with the fall of 1934 when higher hog and corn prices to the individual will depend on the percentage of farmers that adopts this plan. As the price rises net benefit becomes smaller. Consequently a farmer who would join the plan if the price of hogs were to be $5, might very well decide to stay out if he thought the price for next year likely to be $10.

Each rise in the open market price for hogs will decrease the net benefits from the corn-hog plan and each decline will increase them. This is true from the standpoint of the individual farmer. It also applies to the whole group of producers be-

TABLE V. HOG FARM.

VARIATION IN NET BENEFITS WITH VARYING PRICES OF HOGS.

	Old plan	New plan*	Net benefit*
Weight of hogs to be sold, pounds	28,635	21,486	
Expected net income with hogs at $3.00	$ 793	$1,282	$ 489
Expected net income with hogs at 4.00**	1,079	1,497	418
Expected net income with hogs at 5.00	1,363	1,712	349
Expected net income with hogs at 6.00	1,652	1,927	275
Expected net income with hogs at 7.00	1,738	2,142	204
Expected net income with hogs at 8.00	2,224	2,356	132
Expected net income with hogs at 9.00	2,511	2,571	60
Expected net income with hogs at 10.00	2,797	2,786	−11

*Expenses of administration will be deducted from these figures.
**See net income on table IV.

cause the nearer hog prices approach "parity" the smaller the processing tax that can be levied, and consequently the smaller the total amount of benefits which will be available for distribution. Just at present, however, we are interested in the program of the individual farmer and will leave the processing tax angle out of account.

If the hog farmer we have been discussing signs the corn-hog contract he will not be allowed to market over 89 pigs. If their individual weight is the same as in the past they will weigh 21,486 pounds. If he does not sign and continues to farm as heretofore he will sell 28,635 pounds of hogs. Now each time the price of hogs falls $1 this farmer's income will be decreased $286.35 if he did not adopt the plan but only $214.86 if he did adopt it. Consequently, on this particular farm the net benefit would be increased by $71.49 each time the hog price fell $1. Likewise it would be decreased by the same amount if the price rose $1 as an average for the year.

On the hog farm which we have been using as an illustration the benefit would be completely lost by the time hog prices reached $10 per hundred pounds and the farmer would be $11 better off without the plan than with it. Of course, the change in net benefit varies from farm to farm and particularly from one type of farm to another. The net benefit disappears at lower prices than $10 on each of the other types of farms which we are going to discuss. It has already been said that the hog farm, of the type described, stands to benefit more from this plan than any other type.

The price of $3 for hogs used as one illustration in table V is not far from the average of $3.21 received by Iowa farmers in 1932. But the effect of benefit payments on farm income should be judged in view of the 1934 situation rather than an earlier year.

Also, it should not be forgotten that, if prices rise the loss of advantage from the corn-hog plan will be a relative rather than an absolute one. That is, a farmer's net income will not actually decrease but will simply fail to rise so high above present levels as it would if he had not signed the contract.

APPLICATION OF THE PLAN TO A CROP FARM

Tables VI to X show how the corn-hog plan would be applied to a crop farm of 243 acres. The net benefits in this case would be very different from those received on the hog farm, and the advantage would be lost by a much smaller rise in prices of corn and hogs.

One important complication on this farm is that it is a rented farm. Consequently the returns and benefits must be divided up between tenant and landlord instead of all going to one person.

THE CROPPING SYSTEM

The crop farm used as an illustration has been raising about 118 acres of corn and 91 acres of oats. The yield of corn was 48.3 bushels per acre and of oats 48.5 bushels. The total production of corn was 5,720 bushels. A total of 4,336 bushels of corn was sold, of which 2,860 bushels was the landlord's share.

TABLE VI. CROP FARM. THE CROP PLAN.

Crops	Acres	Expense		Yield		Disposition		
		Kind	Amt.	Per acre	Total	Feed and seed	Sales	
							Bu.	Value
Corn: Old plan	118.3	———	$30	48.3 bu.	5,720 bu.	1,384 bu.	1,476	$443
							2,860	858**
New plan	**94.6**	———	**25**	**48.3 bu.**	**4,570 bu.**	**1,170 bu.**	**1,115**	**333**
							2,285	**686****
Oats: Old plan	90.7	Thresh etc.	$100	48.5 bu.	4,400 bu.	767 bu.	1,527	$275
							2,108	379**
New plan	**90.7**		**100**	**48.5 bu.**	**4,400 bu.**	**692 bu.**	**1,600**	**289**
							2,108	**379****
Other Crops*	2.5	———	—	——	——	——	—	—
Pasture: Sweet Clover*	18.0	Seed	$23	——	——	——	—	—
Hog Pasture*	3.8	———	—	——	——	——	—	—
Corn land out of use: new plan	**23.7**	**Seed**	**$20**	——	——	——	—	—
Farmstead, Roads, Etc.*	9.7	———	—	——	——	——	—	—
Totals: Old plan	243.0	———	$153	——	——	——	—	$1,955
New plan	**243.0**	———	**173**	——	——	——	—	**1,687**

*Unchanged
**Landlord's share

TABLE VII. CROP FARM. LIVESTOCK EXPENSES.

Kind of stock	No. head	Home-grown feeds		Commercial feeds			Other expenses
		Kind	Amount	Kind	Amount	Value	
CATTLE*							
Cows	5	Corn	207 bu.	Salt	——	$4	—
Others	9	Oats	9 bu.	——	——	—	$3
		Hay	6½ tons	——	——	—	—
HOGS:							
Sows: Old plan	9	Corn	864 bu.	Mineral	200 lbs.	$6	$29
New plan	**7**		**650 bu.**		**200 lbs.**	**6**	**22**
Old plan		Oats	305 bu.	Oilmeal	100 lbs.	3	—
New plan			**230 bu.**		**100 lbs.**	**3**	—
Old plan		——		Pig meal	200 lbs.	7	—
New plan					**200 lbs.**	**7**	—
POULTRY*	240	Corn	187 bu.	——	——	$15	$11
		Oats	22 bu.	——	——	—	—
HORSES*	8	Corn	126 bu.	——	——	—	—
		Oats	117 bu.	——	——	—	—
		Hay	3 tons	——	——	—	—
TOTALS: Old plan	—	Hay bought $24		Commercial feed		$35	$43
New plan	—					**35**	**36**

*Unchanged

The tenant fed about half his share on the farm. If the corn-hog plan were adopted corn acreage would be reduced to 94.6 acres which, at the same yield, would produce a total of 4,570 bushels.

If the corn-hog plan is adopted 23.7 acres of land will be rented by the AAA, and the total corn benefit at 30 cents per bushel will be $344. Offsetting most of the direct benefit payments, the landlord's share of the crop will be reduced to 2,285 bushels while the tenant's sales will be reduced to 1,115 bushels after adjusting for smaller feeding requirements of hogs. Total sales of corn, at 30 cents per bushel, will be reduced from $1,301 to $1,019. About two-thirds of the loss in corn sales in this particular case will fall on the landlord.

LIVESTOCK REQUIREMENTS

With adoption of the corn-hog plan by this crop farm, reduction in corn raised can be adjusted by changes in sales and consumption by hogs. Under the old plan 864 bushels of corn and 305 bushels of oats were used by hogs. With the 25-percent reduction in hogs, their corn requirements will be reduced to 650 bushels. Between the reduced corn production and the smaller corn requirement of hogs the tenant will have 1,115 bushels of corn to sell instead of 1,476. But, on the other hand, smaller requirements by hogs will result in selling 75 bushels more oats.

LIVESTOCK PRODUCTION

In this case hogs will be the only livestock enterprise affected. Under the old plan 11,790 pounds of hogs were raised. Two hogs were butchered and 48, weighing 11,165 pounds, were sold. With a 25-percent reduction in sales, there will be 36 hogs sold, weighing 8,375 pounds. This will reduce receipts from hogs from $447 to $335.

TABLE VIII. CROP FARM. LIVESTOCK PRODUCTION.

Kind of stock	Production		Used on farm		Sales		
	Kind	Amount	Amount	Value	No.	Amount	Value
CATTLE*	Cattle	2,855 lbs.	——	——	3	2,855 lbs.	$158
	Butterfat	723 lbs.	180 lbs.	$40	—	543 lbs.	119
HOGS: Old plan	Hogs	11,790 lbs.	625 lbs.	$25	48	11,165 lbs.	$447
New plan		**9,000 lbs.**	**625 lbs.**	**25**	**36**	**8,375 lbs.**	**335**
POULTRY*	Poultry	298 lbs.	68 lbs.	$ 7	48	230 lbs.	$ 23
	Eggs	722 doz.	153 doz.	28	—	569 doz.	102
TOTALS: Old plan	——	——	——	$100	—	——	$849
New plan	——	——	——	**100**	—	——	**737**

*Unchanged

FARM SUMMARY

Table IX shows that total livestock sales under the new plan will be $737 as compared with $849 under the old plan. This affects the tenant only. Total crop sales under the new plan will amount to $1,687 as compared with $1,955. The tenant's sales will be reduced from $718 to $622, while the landlord's sales will be reduced from $1,237 to $1,065. When the corn and hog benefits are added to other receipts the total income amounts to $3,111 under the old plan and $3,255 under the new.

On the expense side there will be some reduction in the tenant's outlay, for hired labor. There will be a smaller acreage of corn and a smaller number of hogs to look after. But there will also be a need for some additional labor in seeding down and taking care of the land retired from corn production. It has been estimated in this case that wages paid out will probably be reduced by about $20.

Expenses on hogs will be reduced with a saving to the tenant of $6 or $7. The landlord's expense for purchase of clover seed will, of course, be increased.

In this particular case, reductions in expense on some items are about balanced by increases elsewhere if we take the farm as a whole. Total expenses are reduced only from $1,259 to $1,252.

TABLE IX. CROP FARM.

SUMMARY OF RECEIPTS AND EXPENSES.

Receipts:		Expenses:	
Hogs: Old plan	$ 447	Labor hired: Old plan	$ 133
New plan	**335**	**New plan**	**113**
Other livestock income*	402		
Total livestock sales: Old plan	$ 849	Livestock expense: Old plan	43
New plan	**737**	**New plan**	**36**
Tenant's share: Old plan	$ 718	Crop expense: Old plan	153
New plan	**622**	**New plan**	**173**
Landlord's share: Old plan	1,237	Other operating expenses*	330
New plan	**1,065**	Total operating expense: Old plan	$ 659
Total crop sales: Old plan	$1,955	**New plan**	**652**
New plan	**1,687**	Hay*	24
Miscellaneous receipts:*	207	Commercial feed*	35
Farm Products to household*	100	Total fixed expense*	$ 482
Benefits (New plan):**		Livestock*	59
Corn, 23.7 A., 48.3 bu. @ 30c.	**$ 344**	Total expenditures: Old plan	1,259
Hogs, 36 pigs @ $5	**180**	**New plan**	**1,252**
Total Income: Old plan	$3,111	Net income: Old plan	$1,852
New plan	**3,255**	**New plan**	**2,003**

Net benefit of new plan $151

*Unchanged
**Expenses of administration are to be deducted from these figures.

When we deduct total expenditures from total receipts we find that, for this crop farm, net income without the corn-hog plan is $1,852, while with the plan it will be $2,003, an increase of $151.

NET BENEFITS AND EFFECT OF THE 45-CENT CORN LOAN

As in the case of the hog farm, net benefits from adoption of the corn-hog plan will vary with the open market prices of corn and of hogs. Taking this crop farm as a whole, net benefits with corn at 22 cents and hogs at $3 will amount to $254 (less expenses of administration). With corn at 30 cents and hogs at $4 the net benefits will be $151. At 38 cents and $5 the benefits will be $48.

As has been suggested, the direct net benefit from adoption of the plan will disappear on a crop farm at lower open market prices than on a hog farm. A complication, however, is introduced by the 45-cent loan on corn by the Commodity Credit Corporation. The greatest advantage from this loan is to be obtained on crop farms where there is the greatest amount of corn on which to borrow. This loan cannot be obtained without agreeing to the corn-hog reduction plan.

TABLE X. CROP FARM.

VARIATION IN NET BENEFITS WITH VARYING PRICES OF CORN AND HOGS.

	Old plan	New plan*	Net benefit*
Hogs sold by tenant, pounds	11,165	8,375	
Corn sold by tenant, bushels	1,476	1,112	
Corn sold by landlord, bushels	2,860	2,288	
NET INCOME FOR WHOLE FARM:			
With hogs @ $3.00, Corn @ $.22	$1,393	$1,647	$ 254
With hogs @ 4.00, Corn @ .30**	1,852	2,003	151
With hogs @ 5.00, Corn @ .38	2,311	2,359	48
With hogs @ 6.00, Corn @ .46	2,769	2,715	−54
With hogs @ 7.00, Corn @ .54	3,228	3,070	−158
With hogs @ 8.00, Corn @ .62	3,686	3,326	−260
With hogs @ 9.00, Corn @ .70	4,145	3,782	−363

*Expenses of administration will be deducted from these figures.
**See net income on table IX.

If this landlord still has on hand his share of 2,860 bushels of the current year's crop of corn and if he estimates the open market price during coming months at 30 cents, the ability to borrow 45 cents on this corn will be worth $429 to him. In this particular case the landlord will be financially ahead because of the loan even if he receives none of the direct benefit payments. He should consider this along with the other benefits. By means of this loan, many cash-grain farmers who have large stocks of corn on hand may gain as much from the corn-hog plan as hog producers. But there will be no such gains to intensive livestock producers who buy corn instead of selling it.

DIVISIONS OF BENEFITS BETWEEN LANDLORD AND TENANT

At the time this is written it is not known just what will be the interpretive regulations regarding division of benefits between landlord and tenant. With a cash-rented farm it would seem that the landlord should have no claim to a share in the corn-hog benefits, since his total income from the farm is already fixed by the cash rent agreement with the tenant. His only added expense will be for clover or grass seed to improve the soil. With stock-share farms the benefits will, presumably, be divided in the same proportion as other receipts.

On the crop-share farm, however, the division is not so simple. Benefits on hogs should all go to the tenant since the hogs are produced entirely out of the tenant's feed and by the tenant's labor. The difficulty will come in division of benefits on corn. It seems to be the intent of the contract that, usually, corn benefits should be divided on the same basis as the crop. Benefit payments on corn could not all go to the landlord because the tenant will have to do some work in seeding down

the land taken out of corn. Also the landlord should remember that future benefits will result from planting a soil-building crop.

With open market prices of $4 for hogs and 30 cents for corn benefits of $192 will be required, on the farm used as an example, for the landlord to obtain the same current net returns with or without the corn-hog plan if, for any reason, he were unable to obtain the 45-cent corn loan. His sales of corn will be reduced by the plan by $172 and his added expense for grass seed will be about $20.

At these prices the tenant will need to receive $181 in benefits to come out equally well with or without the plan. His sales will be reduced by $208, while his outlay for labor and expenses on hogs will be smaller by $27. Adding the needed benefits for landlord and tenant together we find that the total benefits for the farm (after deduction of expenses of administration) will need to total $373. Actually, at 30 cents for corn and $5 for hogs, benefits will amount to $524 (less administration). The excess over the necessary $373 should go to the tenant since the primary purpose of the plan is to relieve the distress of farm operators.

On most farms part of the land planted in corn was in sod the previous year. Where it is possible for the acreage retired from corn to consist of sod land; this will save the landlord the purchase of additional grass seed. The farmer should consult his county agent or the Farm Crops and Soils Section at Iowa State College regarding the most satisfactory methods of improving the soil of the rented acreage.

ADJUSTMENTS ON A SOUTHERN IOWA CATTLE RAISING FARM

THE CROPPING SYSTEM

The third illustration is a cattle raising farm of 191 acres. This type of farm differs from the two previous ones in that it contains a considerable acreage of rough land which is kept in pasture. This leads to a relatively large cattle enterprise and fewer hogs. Only 46.8 acres were in corn and 20.8 acres in oats.

With relatively small corn and hog enterprises, benefits from the corn-hog plan will, of course, be materially less than on the hog or the crop farms. Adjustment of other enterprises to the reduction in corn will also be more difficult.

If the corn-hog plan is adopted by this farm the corn will be reduced to 37.4 acres, yielding 1,425 instead of 1,780 bushels, using the same yield per acre. Under the old plan, as shown in table XII, about half the corn was fed to hogs, a third to

TABLE XI. SOUTHERN IOWA CATTLE RAISING FARM. THE CROP PLAN.

Crops	Acres	Expense		Yield		Disposition		
		Kind	Amt.	Per acre	Total	Feed and seed	Sales	
							Bu.	Value
CORN: Old plan	46.8	———	—	38.1 bu.	1,780 bu.	1,757 bu.	23	$7
New plan	**37.4**	———	—	**38.1 bu.**	**1,425 bu.**	**1,425 bu.**	—	—
OATS: Old plan	20.8	Threshing,	$24	39.2 bu.	815 bu.	670 bu.	145	$26
New plan	**20.8**	etc.	**24**	**39.2 bu.**	**815 bu.**	**815 bu.**	—	—
CLOVER AND OAT HAY*	18.0	———	$1	1.4 tons	25 tons	25 tons	—	—
SOYBEANS*	1.5	———	—	no crop		——	—	—
BLUEGRASS PASTURE*	90.0	———	—	——	——	——	—	—
Corn land out of use: new plan	**9.4**	**Seed**	**$10**	——	——	——	—	—
HOMESTEAD, ROADS, ETC.*	14.0	———	—	——	——	——	—	—
TOTALS: Old plan	191.1	———	$25	——	——	——	—	$33
New plan	**191.1**	———	**35**	——	——	——	—	—

*Unchanged

cattle and the rest to horses and poultry. Under the corn-hog plan it will be necessary to reduce the number of hogs sold from 53 to 40, cutting the corn requirement of hogs from 945 to 710 bushels. This will release 235 bushels of corn from the hog enterprise, but the size of the corn crop will be reduced by 355 bushels.

LIVESTOCK REQUIREMENTS

Under the old plan 23 bushels of corn were sold. Feeding this corn will reduce the corn deficiency to that small extent. The most important source of feed to replace corn will be from the oats crop. Sales of oats amounted to 145 bushels under the old plan, and this is capable of making up the greater part of the deficiency. Also raising a smaller number of hogs will reduce the oats consumption by hogs from 213 to 163 bushels. This makes available 195 bushels of oats when added to that previously sold.

Now let us see how the shift in feeds could be carried out. Horses have been fed chiefly on corn and could use relatively more oats. Suppose that we replace 60 bushels of the horse's corn by 95 bushels of oats and then make the rest of the shift with the cattle. In this particular case, this works out very nicely and we are able to shift feeds about so that it will not be necessary to reduce the size of any livestock enterprise other than hogs.

TABLE XII. SOUTHERN IOWA CATTLE RAISING FARM.

LIVESTOCK EXPENSES.

Kind of stock	No. head	Home-grown feeds		Commercial feeds		
		Kind	Amount	Kind	Amount	Value
CATTLE:						
Milk cows: Old plan	11	Corn	634 bu.	——	——	——
New plan			**572 bu.**	——	——	——
Stock cows: Old plan	6	Oats	170 bu.	——	——	——
New plan			**270 bu.**	——	——	——
Others	15	Hay*	20 tons	——	——	——
		Fodder*	5½ tons	——	——	——
HOGS:						
Sows: Old plan	8	Corn	945 bu.	Tankage	1,200 lbs	$20
New plan	**6**		**710 bu.**		**1,000 lbs**	**17**
Old plan		Oats	213 bu.	——	——	——
New plan			**163 bu.**	——	——	——
		Sk. milk*	450 gal.	——	——	——
POULTRY*	93	Corn	81 bu.	——	——	——
		Oats	137 bu.	——	——	$ 2
		Sk. milk	235 gal.	——	——	——
HORSES: Old plan	5	Corn	120 bu.	——	——	——
New plan			**60 bu.**	——	——	——
Old plan		Oats	75 bu.	——	——	——
New plan			**170 bu.**	——	——	——
		Hay*	5 tons	——	——	——
TOTALS: Old plan	——	——	——	——	——	$22
New plan	——	——	——	——	——	**19**

*Unchanged

LIVESTOCK PRODUCTION

As is shown in tables XIII and XIV the reduced number of hogs on this farm will cut the sales of hogs from $533 to $393, while sales of crops will be reduced from $33 to zero. This will be more than balanced by benefit payments which amount to $107 on corn and $200 on hogs. The total receipts under the old plan are $1,457 as compared with $1,591 under the new plan.

TABLE XIII. SOUTHERN IOWA CATTLE RAISING FARM.

LIVESTOCK PRODUCTION.

Kind of stock	Production		Used on farm		Sales		
	Kind	Amount	Amount	Value	No.	Amount	Value
CATTLE*	Cattle	10,500 lbs.	1	$25	12	10,000 lbs.	$550
	Butterfat	——	——	150	—	——	——
HOGS: Old plan	Hogs	13,925 lbs.	600 lbs.	$24	53	13,325 lbs.	$533
New plan		**10,440 lbs.**	**600 lbs.**	**24**	**40**	**9,840 lbs.**	**393**
POULTRY*	Poultry	370 lbs.	220 lbs.	$22	—	150 lbs.	$15
	Eggs	407 doz.	137 doz.	25	—	245 doz.	44
TOTALS: Old plan	——	——	——	$246	—	——	$1,142
New plan	——	——	——	**246**	—	——	**1,002**

*Unchanged

TABLE XIV. SOUTHERN IOWA CATTLE RAISING FARM.

SUMMARY OF RECEIPTS AND EXPENSES.

Receipts:		Expenses:	
Hogs: Old plan	$ 533	Crop expense: Old plan	$ 25
New plan	**393**	**New plan**	**35**
Other livestock income*	609	Other operating expense*	87
Total livestock sales: Old plan	$1,142	Com'l. feed bought: Old plan	22
New plan	**1,002**	**New plan**	**19**
Total crop sales: Old plan	33	Total fixed expense*	$ 429
New plan	—		
Farm products to household*	282	Total expenditures: Old plan	$ 563
		New plan	**570**
Benefits: New plan**			
9.4 acres corn, 38 bu., @ 30c.	**107**		
40 pigs @ $5	**200**		
Total income: Old plan	$1,457	Net income: Old plan	$ 894
New plan	**1,591**	**New plan**	**1,021**

Net benefit of new plan $127

*Unchanged
**Expenses of administration are to be deducted from these figures.

FARM SUMMARY

On the expense side of the statement changes are almost negligible in this case. Expenses for clover seed bought are increased by $10 while feed bought for hogs is reduced by $3. The net income, if prices were to remain at 30 cents for corn and at $4 for hogs, would be $1,021 under the new plan as compared with $894 under the old plan. The net benefit at these prices amounts to $127.

If hogs were $3 per hundred pounds the net benefit, as shown in table XV, would be $162. At $5 per hundred pounds the net benefit would be $92, and between $7 and $8 it would disappear. It should be pointed out, however, that in the southern Iowa section a greater benefit is to be obtained than in most other parts of the state from soil improvement programs permitted by adoption of the corn-hog plan.

TABLE XV. SOUTHERN IOWA CATTLE RAISING FARM.

VARIATION IN NET BENEFITS WITH VARYING PRICES OF HOGS.

	Old plan	New plan*	Net benefit*
Pounds hogs sold	13,325	9,840	
With hogs @ $3.00	$ 761	$ 923	$ 162
With hogs @ 4.00**	894	1,021	127
With hogs @ 5.00	1,027	1,119	92
With hogs @ 6.00	1,160	1,218	58
With hogs @ 7.00	1,294	1,316	22
With hogs @ 8.00	1,427	1,414	−13
With hogs @ 9.00	1,560	1,512	−48

*Expenses of administration will be deducted from these figures.
**See net income on table XIV.

APPLICATION OF THE CORN-HOG PLAN TO A DAIRY FARM

THE CROPPING SYSTEM

Our fourth illustration is a dairy farm of 160 acres. As it is organized at present the cattle and poultry together bring in about one-fourth more income than hogs. Out of the 159.5 acres in the farm 43 acres are in corn, 22.5 in oats and 62 acres in bluegrass pasture. If the corn-hog plan were adopted corn acreage would be cut to 33.4 and production from 2,215 to 1,720 bushels.

TABLE XVI. DAIRY FARM. THE CROP PLAN.

Crops	Acres	Expense		Yield		Disposition	
		Kind	Amt.	Per acre	Total	Feed and seed	Sales
Corn: Old plan	43	———	—	51.5 bu.	2,215 bu.	2,215 bu.	—
New plan	**33.4**	———	—	**51.5 bu.**	**1,720 bu.**	**1,720 bu.**	—
Silage*	5	———	—	13 tons	65 tons	60 tons	—
Oats: Old plan	22½	Clover seed	$41	38 bu.	845 bu.	845 bu.	—
New plan	**22½**	and twine	**41**	**38 bu.**	**845 bu.**	**845 bu.**	—
Other Crops*	1	———	—	——	——	——	$87
Alfalfa Hay*	12	Seed and Inoculation	$48	2.8 tons	34 tons	20 tons	—
Oat Hay*	7	Seed	25	1.5 tons	10 tons	10 tons	—
Bluegrass Pasture*	62	———	—	——	——	——	—
Farmsteads and Roads*	7	———	—	——	——	——	—
Corn land out of use, new plan	**9.6**	**Seed**	**$10**	——	——	——	—
Totals: Old plan	159.5	———	$114	——	——	——	$87
New plan	**159.5**	———	**124**	——	——	——	**87**

*Unchanged

LIVESTOCK REQUIREMENTS

This farmer found it necessary to buy 85 bushels of corn in order to carry out his dairy and feeding operations. If he adopted the corn-hog plan his corn production would be cut 495 bushels, while the corn requirements for hogs would be reduced by only 445 bushels. This would necessitate the purchase of an added 50 bushels of corn (less any saving that might be made in corn to sows prior to September, 1934) and bring the total purchase up to 135 bushels. This, of course, is a relatively small purchase. But if it is multiplied by some hundreds of thousands of similar small increases in purchases it may become a rather important factor.

TABLE XVII. DAIRY FARM. LIVESTOCK EXPENSES.

Kind of stock	No. head	Home-grown feeds		Commercial feeds			Other expenses
		Kind	Amount	Kind	Amount	Value	
CATTLE*							
Milk cows	10	Corn	225 bu.	Bran	5,480 lbs.	$66	—
Other	17	Oats	215 bu.	Oilmeal	2,500 lbs.	40	$10
		Hay	12.1 tons	——	——	—	—
		Silage	60 tons	——	——	—	—
HOGS: Old plan		Corn	1,720 bu.	Tankage	2,500 lbs.	42	$ 6
New plan			**1,275 bu.**		**1,700 lbs.**	**29**	4
SOWS: Old plan	8	Oats	175 bu.	Oilmeal	500 lbs.	8	—
New plan	**6**		**175 bu.**		**400 lbs.**	**6**	—
Old plan		——	——	Shorts	300 lbs.	4	—
New plan			——		**200 lbs.**	**2**	—
		Sk. milk*	3,057 gal	——	——	—	—
POULTRY*	408	Corn	250 bu.		——	—	$4
		Oats	150 bu.	Mash	7,100 lbs.	89	—
		Sk. milk	875 gal.	——	——	—	—
HORSES*	5	Corn	105 bu.	——	——	—	—
		Oats	230 bu.	——	——	—	—
		Hay	17½ tons	——	——	—	—
TOTALS: Old plan	—	Corn bo't 85 bu., $26		Commercial feeds		$249	$20
New plan	—	**Corn b't 135 bu., 40**		**Commercial feeds**		**232**	**18**

*Unchanged

LIVESTOCK PRODUCTION

The reduction in hogs sold from 96 to 72 head will cut income from hogs by $211. This will be offset by benefit payments of $360 on hogs and $148 on corn. So the total income will be increased from $2,446 to $2,743.

TABLE XVIII. DAIRY FARM. LIVESTOCK PRODUCTION.

Kind of stock	Production		Used on farm		Sales		
	Kind	Amount	Amount	Value	No.	Amount	Value
CATTLE*	Cattle	3,850 lbs.	1,000 lbs.	$56	—	2,850 lbs.	$157
	Butterfat	2,049 lbs.	160 lbs.	35	—	1,889 lbs.	416
HOGS: Old plan	——	21,160 lbs.	——	——	96	21,160 lbs.	$846
New plan	——	**15,870 lbs.**	——	——	**72**	**15,870 lbs.**	**635**
POULTRY*	Poultry	——	——	——	—	215 lbs.	$22
	Eggs	2,487 doz.	106 doz.	$19	—	2,381 doz.	429
TOTALS: Old plan	——	——	——	$110	—	——	$1,870
New plan	——	——	——	**110**	—	——	**1,659**

*Unchanged

FARM SUMMARY

On the expense side of the summary we see that reductions in livestock expense and commercial feeds for hogs will be al-

TABLE XIX. DAIRY FARM.

SUMMARY OF RECEIPTS AND EXPENSES.

Receipts:		Expenses:	
Hogs: Old plan	$ 846	Livestock expense: Old plan	$ 20
New plan	**635**	**New plan**	**18**
Other livestock income*	1,024	Crop expense: Old plan	114
		New plan	**124**
Total livestock sales: Old plan	1,870	Other operating expense*	303
New plan	**1,659**		
		Total oper. expense: Old plan	437
Total crop sales*	87	**New plan**	**445**
Miscellaneous receipts:*	204	Com'l. feed bought: Old plan	249
Farm products to household*	285	**New plan**	**232**
		Corn bought: Old plan	26
Benefits: New plan**		**New plan**	**40**
Corn, 9.6 acres, 51.5 bu. @ 30c.	**148**	Total fixed expense*	625
Hogs, 72 @ $5	**360**	Total expenditures: Old plan	1,336
		New plan	**1,342**
Total income: Old plan	$2,446	Net income: Old plan	$1,110
New plan	**2,743**	**New plan**	**1,401**

Net benefit of new plan $291

*Unchanged
**Expenses of administration are to be deducted from these figures.

most exactly equalled in this case by increases in crop expense and purchases of additional corn. The corn-hog plan will, therefore, result in an increase of $298 in the net income, if hogs averaged $4 and corn 30 cents on the open market under each plan.

This is the first farm we have discussed on which there is normally a purchase of corn. This fact has an important bearing on net benefits to be obtained at different corn and hog prices. With each rise in prices the farmer will get a smaller benefit from the increased price of hogs and also will have to pay out more for corn bought.

Under the old plan each rise of $1 in the price of hogs will result in increased income of $211.60 (on 21,160 pounds of

TABLE XX. DAIRY FARM.

VARIATION IN NET BENEFITS WITH VARYING PRICES OF CORN AND HOGS.

	Old plan	New plan*	Net benefit*
Hogs sold, pounds	21,160	15,870	
Corn bought, bushels	85	135	
With hogs @ $3.00 and corn @ $.22	$ 905	$1,253	$348
With hogs @ 4.00 and corn @ .30**	1,110	1,401	291
With hogs @ 5.00 and corn @ .38	1,315	1,549	234
With hogs @ 6.00 and corn @ .46	1,520	1,697	177
With hogs @ 7.00 and corn @ .54	1,726	1,845	119
With hogs @ 8.00 and corn @ .62	1,931	1,993	62
With hogs @ 9.00 and corn @ .70	2,136	2,141	5
With hogs @ 10.00 and corn @ .78	2,341	2,289	−52

*Expenses of administration are to be deducted from these figures.
**See net income on table XIX.

hogs). If corn rose 8 cents per bushel at the same time, the expense would be increased by $6.80 on 85 bushels of corn bought. The net increase in income will therefore be $204.80.

Under the new plan an increase of $1 on hogs will increase receipts by $158.70 (on 15,870 pounds of hogs). An increase of 8 cents per bushel on corn will at the same time raise expenses by $10.80 on 135 bushels of corn bought. The net increase will, therefore, be $147.90, or $56.90 less than if the corn-hog plan were not adopted.

The net benefit, however, will not disappear in this case until prices are over $9 for hogs and 70 cents for corn.

SUCCESS OF CORN-HOG PLAN

In closing it should be repeated that the primary purpose of this bulletin is to deal with the problem of the individual farmer. Other bulletins will explain the need for the plan and its advantages to farmers as a group. Various other problems are also raised by this plan, such as the opportunity to improve soil for future years. Some of these are highly important but cannot be appraised in exact terms of dollars and cents.

It is true that the success of the plan will depend on its adoption by a large percentage of the corn and hog raisers of the country. But its strongest practical appeal is in the fact that it offers direct benefits to the individual farmer. Its sponsors are depending on this feature to obtain the greatest support for it. The purpose of this publication is to explain a method whereby the individual can estimate the net benefit of the corn-hog plan to his own income, and to facilitate the adjustments which he will need to make in his farm organization in order to obtain the greatest possible advantage from the plan.

APPENDIX

OUTSTANDING FEATURES OF THE CORN-HOG REDUCTION CONTRACT

I. Performance by Producer

The producer shall:

1. Reduce the acreage planted to field corn (hereinafter referred to as "corn") in 1934 on the farm described above (hereinafter referred to as "this farm") not less than 20 percent below the adjusted average acreage planted to corn for 1932 and 1933 on the land now in this farm (hereinafter referred to as the "1932-33 average corn acreage"). The producer may, in 1934, retire from corn production as many acres in excess of such 20 percent as he may desire, but corn reduction payment hereunder shall be made only on a number of acres retired from corn production pursuant to this contract not in excess of 30 percent of such 1932-33 average corn acreage, unless otherwise authorized by the Secretary. The acres on which corn reduction payment will be made (hereinafter referred to as the "contracted acres") shall be marked for identification as the Secretary may direct.

2. Reduce in 1934 the number of hog litters farrowed on this farm and farrowed by hogs owned by him not located on this farm (hereinafter referred to as "1934 litters") 25 percent below the adjusted annual average number of litters owned by him when farrowed in 1932 and 1933 (hereinafter referred to as "1932-33 litters"); and reduce the number of hogs produced for market from such 1934 litters 25 percent below the adjusted annual average number of hogs produced for market from such 1932-33 litters.

3. Not increase on this farm in 1934 above 1932 or 1933, whichever is higher: (*a*) The total acreage of crops planted for harvest, plus the contracted acres; (*b*) The acreage planted to each crop for sale, designated as a basic commodity in the Act; (*c*) The total acreage of feed crops other than corn and hay; (*d*) The number of any kind of livestock other than hogs designated as a basic commodity in the Act (or a product of which is so designated) kept on this farm for sale (or the sale of product thereof). And not increase the number of feeder pigs bought in 1934 above the adjusted average number for 1932 and 1933.

4. Not increase in 1934 the aggregate corn acreage on all other land owned, operated, or controlled by him which is not covered by a Corn-Hog Reduction Contract above the average acreage for such land for 1932 and 1933; and not have any vested or contingent interest in hogs located on land not owned or operated by him.

5. Use or permit to be used the contracted acres only as may be prescribed by administrative rulings. Unless otherwise prescribed, such acres shall not be used except for planting additional permanent pasture; for soil-improving and erosion-preventing crops not to be harvested; for resting or fallowing the land; for weed eradication; or for planting farm wood lots.

* * * * * * * * * * *

II. Performance by Secretary

The secretary shall:

10. Upon such proof of compliance with the terms of this contract as the Secretary may require, pay:

A. Corn Reduction Payment—For each contracted acre, 30 cents per bushel of adjusted estimated yield of corn, to be paid as follows: The pro rata share of the administrative expenses of the Corn-Hog Control Association for the above-named county will be paid to the Association, and the remain der will be paid as indicated in part V hereof, in two installments: 15 cents per bushel as soon as practicable after this contract is accepted by the Secretary, and 15 cents per bushel, less pro rata share of expenses, on or after November 15, 1934.

B. Hog Reduction Payment—$5.00 per head on 75 percent of the adjusted annual average number of hogs produced for market from 1932-33 litters, to be paid as follows: The pro rata share of the administrative expenses of the Corn-Hog Control Association for the above-named county will be paid to the Association, and the remainder will be paid as indicated in part V hereof, in three installments: $2.00 per head as soon as practicable after this contract is accepted by the Secretary, $1.00 per head on or about November 15, 1934, and $2.00 per head on or about February 1, 1935, less pro rata share of expenses to be deducted from one or more of these payments. If the number of hogs from 1934 litters marketed before, and held for future marketing on January 1, 1935, is in excess of the number to which the producer has agreed to reduce, there may be deducted from such payment $20.00 per head on each or any of the hogs in excess of such number. In lieu of such deduction or any part thereof the Secretary may require a corresponding part of such excess to be disposed of as he may direct.

* * * * * * * * * * *

IV. Participation by Landlord

14. The landlord agrees to be bound by all of the terms of this contract as if therein named as the producer, and without limitation of the foregoing the landlord agrees not to increase in 1934 the aggregate corn acreage on all other land owned, operated or controlled by him in 1934 not covered by a Corn-Hog Reduction Contract, nor his production of hogs in 1934 not under such a contract, above the respective annual averages for 1932 and 1933; provided, however, the landlord shall not be responsible for hog production on this farm unless receiving part of the hog reduction payment hereunder, nor for the producer's production of corn or hogs on land in which the landlord has no interest.